MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT
PROPOSED TITLE V OPERATING PERMIT TV 28-04

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

ISSUED TO:

Duke Energy Moss Landing LLC
Moss Landing Power Plant
P.O. Box 690
Moss Landing, CA 95039

PLANT SITE LOCATION:

Highway 1 and Dolan Road
Moss Landing, CA 95039

ISSUED BY:

_____ _____
Douglas Quetin, Air Pollution Control Officer Effective Date

ORIS Code: 0260

Nature of Business: Electric Power Generation

SIC Codes: 4911 - Electric Power Generation

RESPONSIBLE OFFICIAL:

Name: Elton E. McCrillis
Title: Plant Manager
Phone: (831) 633-6746

ALTERNATIVE RESPONSIBLE OFFICIAL:

Name: Rex A. Lewis
Title: Production Superintendent
Phone: (831) 633-6698

FACILITY CONTACT PERSON:

Name: Steve Abbott
Title: Environmental Specialist
Phone: (831) 633-6649

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FACILITY DESCRIPTION

Duke Energy's Moss Landing Power Plant is an electric generating facility located in Moss Landing, California. The facility has a present net power production capacity of approximately 2,590 megawatts from two large boilers and two combined cycle gas turbine units. The two large boilers, Units 6 and 7 (Boilers 6-1 and 7-1) began operation in 1967 and 1968, respectively, and the two combined cycle gas turbine units had their first fires lit during the second quarter of 2002 and began commercial operation in the third quarter of 2002.

Historically, a total of ten boilers were operational at the facility. On December 26, 1995 Pacific Gas and Electric (previous owner of the facility) submitted Acid Rain (Part 72) "Retired Unit Exemption" applications for Boilers 1 - 8 at the facility. A "Retired Units Exemption" was granted by the District on April 12, 1996 and was retroactive to January 1, 1996 for Boilers 1 - 8. This "Retired Units Exemption" was valid until January 1, 2000, and based upon revisions to Part 72 has been extended indefinitely. Boilers 1 - 8 will no longer be identified on this permit as the demolition of the boiler stacks and exhaust fans make it impossible to operate these units, and Duke's plan is to demolish the boilers.

In addition to the boilers and the combined cycle gas turbine units, Duke Energy operates ancillary equipment at the facility. This ancillary equipment will be included on the Title V permit for the facility.

EQUIPMENT DESCRIPTION

POWER GENERATION FACILITY CONSISTING OF:

TWO 765 MW UNITS - BOILERS NUMBER 6-1 AND 7-1 EACH CONSISTING OF:

Steam Generator, Babcock and Wilcox Company, Once-Through, Radiant, Reheat, Pressurized Furnace Type, Nominal 6500 MMBtu/hr, Natural Gas-Fired.

Combustion Control And Burner Management Provided By Foxboro Integrated Distributed Control System.

Steam Production Rate: Nominal 5,100,000 Lb/hr (At 1005° F And 3830 Psia)

Forced Draft Fans:

Two Forced Draft Fans, Howden Variax Variable Pitch Axial Flow Type ANT-2650/1200M, Each Powered By Teco Westinghouse 6,860 Hp Electric Motor.

Induced Draft Fans:

Two Induced Draft Fans, Howden Variax Variable Pitch Axial Flow Type ANN-3400/2000B, Each Powered By Teco Westinghouse 6,440 Hp Electric Motor.

Air Preheaters:

Two (2) Ljungstrom Regenerative Air Preheaters, Each With 334,800 Ft^2 Of Heating Surface And Equipped With Stainless Steel Intermediate And Cold-End Baskets.

Air Preheater Drain System And Stack Wash Collection System.

Burners And Overfire Air Ports:

Sixteen (16) Burner Cells Total, Eight (8) Front Wall, Eight (8) Back Wall.

Each Burner Cell Equipped With Three (3) Babcock & Wilcox S-Type Low NO_x Burners, And Two (2) Ignitors.

Each S-Burner Equipped With Total Air Sliding Damper, Adjustable Spin Vanes, Core Air Sliding Disk, And Gas Spud Assembly.

Eight (8) Dual Zone Overfire Air Ports, Four (4) Front Wall, Four (4) Back Wall.

Gas Recirculation Fans:

Two (2) Flue Gas Recirculation Fans, Centrifugal Type, Each Rated At 252,000 CFM @ 12.5 Inches H_2O Static Pressure.

Selective Catalytic Reduction (SCR) System:

Single Reactor Vessel With Associated Duct Work.

Catalyst, 169 M^3 Cormetech Type CM-37 Vanadium, Titanium, And Tungsten Oxide Honeycomb Catalyst, With The Ability To Add An Additional 84 M^3 If Necessary.

Ammonia Injection System, Two-Train Ammonia Flow Control System Providing Vaporized Aqueous Ammonia Via Flow Control Valves, Vaporizers, And Dilution Air Blowers To The Ammonia Injection Grid Located In The Economizer Outlet .

Continuous Emissions Monitoring System:

Two CiSCO Sample Acquisition Probes Located Approximately 120' Above Grade Inside The Stack

Instrumentation Shelter, 8' x 10', Located At The Base Of The Stack., Shelter Houses Sample Transport And Conditioning Systems, And Analyzers.

Analyzers; Rosemount Model 951C Chemiluminescence Analyzer Measuring NO_2; And Siemens Ultramat/Oxymat 6E Analyzer Measuring CO Via Non-Dispersive Infrared Measurement And O_2 Via Paramagnetic Measurement.

Data Acquisition System, VIM Technologies, Installed On An IBM Compatible Computer Located In The

Energy Management Center.

Exhaust Stack:

500 Ft High Above Grade, 66 Ft O.D. At Base, 20 Ft O.D. At Top.

TWO 530 MW UNITS - COMBINED CYCLE UNITS 1 & 2 EACH CONSISTING OF:

Two Gas Turbine Generators, General Electric Frame 7, Model PG7241, Each Rated At 1,870 MMBtu/Hr Maximum Heat Input And 180 MW Nominal Electrical Output, With Dry Low-NO_x Combuster.

Water Tube Type Heat Recovery Steam Generators (HRSG), Nominal Ratings: High Pressure Steam Capacity: 409,900 Lbs/Hr @ 1,903 psia And 1,047°F, Intermediate Pressure Steam Capacity: 484,500 Lbs/Hr @ 358 psia And 1,022°F, Low Pressure Steam Capacity: 55,300 Lbs/Hr @ 71 psia And 499°F.

Steam Turbine Generator And Condenser Serving Gas Turbine Units, Quadruple Admission, Triple Extraction, 196.8 MW Nominal Rated Electrical Output.

Selective Catalytic Reduction NO_x Control Systems Located Within The HRSG.

Ammonia Injection Systems.

CEM Systems Designed To Continuously Record The Measured Gaseous Concentrations, And Calculate And Continuously Monitor And Record The NO_x And CO Concentrations Corrected To Fifteen (15) Percent Oxygen (O_2) On A Dry Basis.

AQUEOUS AMMONIA STORAGE TANKS

Aqueous Ammonia Storage Tank Farm Consisting Of 5 Storage Tanks Each With A Capacity Of 30,000 Gallons.

START-UP PACKAGE BOILER

One Nebraska Boiler, Self Contained Packaged Forced Draft Steam Boiler, With A National Combustion Equipment Inc. Hyper-Mix Low NO_x Burner Rated At 124.8 MMBtu/hr, Natural Gas Fired.

GASOLINE STORAGE TANK

One 1,000 Gallon Aboveground Gasoline Storage Tank With Coaxial Vapor Recovery And Submerged Fill Equipment.

ABRASIVE BLASTING EQUIPMENT

Abrasive Blasting Booth With Stationary Blast Equipment, Compressed Air Provided By Electric Compressor, And Portable Abrasive Blasting Equipment With Compressed Air Provided By Electric Or Diesel Fired Compressor.

PAINT SPRAY FACILITY

Outdoor Paint Spray Operations Authorized At Three Locations.

EMERGENCY GENERATOR

Caterpillar Engine Generator Set, 1502 BHp, 1,000 Kw Output.

EMERGENCY FIRE PUMPS

Caterpillar Engine Driven Fire Pump, 340 Bhp.

Two Cummins Engine Driven Fire Pumps, Each 370 BHp.

LABORATORY FUME HOODS

Fume Hoods, Located In Chemical Laboratory.

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS

1. The heat input rate to each Boiler (6-1 and 7-1) shall not exceed 7,048 MMBtu/hr. [District Rule 207]

2. The heat input rate to each Gas Turbine shall not exceed 1,870 MMBtu/hr. [District Rule 207]

3. The pollutant mass emission rates in the exhaust discharged to the atmosphere from each Boiler (6-1 and 7-1) shall not exceed the following limits [District Rule 207, District Rule 431 limits of 0.3 lbs NO_x/MMBtu and 9.64 tons NO_x/day when averaged over the May 1 through October 31 annually.]:

Pollutant	Lbs/Hour	Lbs/Day
Oxides of Nitrogen (NO_x)	85.6	2,054.4
Carbon Monoxide (CO)	862.7	20,704.8
Particulate Matter <10 microns (PM_{10})	52.5	1,260.0
Volatile Organic Compounds (VOC)	38.0	912.0
Ammonia (NH_3)	31.6	758.4
Sulfur Dioxide (SO_2)	4.9	117.6

4. The maximum daily combined emissions from the Gas Turbines, including start-ups and shutdowns and combustor tuning periods, shall not exceed the following limits [District Rule 207]:

Pollutant	Lbs/Day
Oxides of Nitrogen (NO_x)	2,589.4

Carbon Monoxide (CO)	17,301.8
Particulate Matter <10 microns (PM_{10})	864.0
Volatile Organic Compounds (VOC)	620.0
Ammonia (NH_3)	1,224.0
Sulfur Dioxide (SO_2)	124.8

5. The pollutant mass emission rates in the exhaust discharged to the atmosphere from each Gas Turbine shall not exceed the following limits [District Rule 207]:

Pollutant	Lbs/Hour	Lbs/Day
Oxides of Nitrogen (NO_x)	17.23	413.5
Carbon Monoxide (CO)	37.76	906.2
Particulate Matter <10 microns (PM_{10})	9.00	216.0
Volatile Organic Compounds (VOC)	4.79	115.0
Ammonia (NH_3)	12.75	306.0
Sulfur Dioxide (SO_2)	1.30	31.2

These limits shall not apply during start-up, which is not to exceed four (4) hours, during shutdown, which is not to exceed two (2) hours, or during steam turbine cold start-up or combustor tuning, which are not to exceed six (6) hours. SCR catalytic controls and good engineering practices shall be used to the fullest extent practical during start-up and shutdown to minimize pollutant emissions.

Steam turbine cold start-up periods are start-up periods that follow a shutdown of the steam turbine for at least 72 hours. Combustor tuning activities include all testing, adjustment, tuning, and calibration activities recommended by the gas turbine manufacturer to insure safe and reliable steady state operation of the gas turbine following replacement of the combustor. This includes, but is not limited to, adjusting the amount of fuel distributed between the combustion turbine's staged fuel system to simultaneously minimize NO_x, CO, and VOC production while ensuring combustor stability.

6. The pollutant concentrations discharged to the atmosphere from each Gas Turbine shall not exceed the following limits, calculated at 15 percent O_2 on a one-hour rolling average unless otherwise noted [District Rule 207]:

Pollutant	Concentration (ppm)
Oxides of Nitrogen (as NO_2)	2.5
Carbon Monoxide (CO)	9.0 (rolling three-hour average)
Ammonia (NH_3)	5.0 (3-60 minute averages)

These limits shall not apply during start-up, which is not to exceed four (4) hours, shutdown, which is not to exceed two (2) hours or during steam turbine cold start-up or combustor tuning, which is not to exceed six (6) hours. SCR catalytic controls and good engineering practices shall be used to the fullest extent practical during start-up, shutdown and combustor tuning to minimize pollutant emissions.

7. The pollutant emission rates discharged to atmosphere from each Gas Turbine during a start-up, shutdown or combustor tuning activities shall not exceed the following limits. These limits apply to any start-up period which shall not exceed four (4) hours, to any shutdown, which shall not exceed two (2) hours, and to any steam turbine cold start-up or combustor tuning, which shall not exceed six (6) hours. [District Rule 207]

Pollutant	Lbs/Start-Up	Lbs/Cold Start-up or Combustor Tuning	Lbs/Shutdown
Oxides of Nitrogen (as NO_2)	320.0	480.0	160.0
Carbon Monoxide (CO)	3,608.0	5,412.0	1,804.0
Volatile Organic Compounds (as CH_4)	64.0	214.0	32.0

8. Exceedance of the hourly NO_x emission limits specified in Conditions 5 and 6 is allowed during short-term excursions which total less than 10 hours per rolling 12-month period. [District Rule 207]

   Short-term excursions are defined as 15-minute periods designated by Duke Energy Moss Landing LLC that are a direct result of a diffusion mode switchover, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x concentration exceeds 2.5 ppm corrected to 15% O_2.

   The maximum 1-hour average NO_x concentration for periods that include short-term excursions shall not exceed 30 ppmvd corrected to 15% O_2. All emissions during short-term excursions shall be included in all calculations of daily, quarterly, and annual mass emissions required by this permit.

9. The emissions concentration of oxides of nitrogen, as NO_2, discharged to atmosphere from the Start-up Package Boiler shall not exceed 10 ppmv dry, calculated at 3% O_2. [District Rule 207]

10. The Start-up Package Boiler shall only be fired on natural gas, and shall be operated less than 876 hours per year. [District Rule 207 & 40 CFR Part 60, Subpart Db]

11. Cumulative emissions, including emissions generated during Start-ups, Shutdowns and Combustor Tuning Activities, from all power generation equipment and the start-up package boiler at the Moss Landing Power Plant shall not exceed the following quarterly limits: [District Rule 207]

Pollutant	Pounds Of Emissions Per Calendar Quarter			
	First	Second	Third	Fourth
NO_x (as NO_2)	286,778	285,301	409,492	336,584
SO_x	23,823	24,567	32,613	29,468
VOC	144,537	150,294	212,540	188,206
PM_{10}	213,533	221,488	307,505	273,879
CO	2,929,068	3,059,753	4,472,774	3,920,385

12. No more than one of the Gas Turbines shall be operated in support of a steam turbine cold start-up or undergo combustor tuning at any one time. [District Rule 207]

13. The total number of hours during which each Gas Turbine may be operated to support a steam turbine cold

start-up or may undergo combustor tuning shall not exceed 30 hours per year. [District Rule 207]

14. Boiler 6-1, Boiler 7-1, and the Gas Turbines shall be abated by properly operated and maintained Selective Catalytic Reduction Systems. [District Rule 207]

15. Boiler and stack inspection and cleaning shall be conducted during Boiler 6-1 and 7-1 outages of 21 days or more. [District Rule 207]

16. Duke Energy Moss Landing LLC shall hold Sulfur Dioxide Allowances in the compliance subaccounts for Boilers 6-1 and 7-1and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A) not less than the total annual emissions of sulfur dioxide for the previous calendar year from each unit. [District Rule 219]

17. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. [District Rule 400]

    This limit shall not apply to the gas turbines during turbine start-up, which is not to exceed four (4) hours. Good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

18. During periods of gas turbine start-up, which is not to exceed four (4) hours, no air contaminant shall be discharged into the atmosphere from the gas turbines for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 2 or equivalent 40% opacity. [District Rule 400]

19. Particulate matter shall not exceed 0.15 grains per standard dry cubic foot in any exhaust stream, except stationary internal combustion engines. [District Rule 403]

20. Sulfur compounds calculated as sulfur dioxide (SO_2) shall not exceed 0.2 percent by volume in any exhaust stream. [District Rule 404]

21. Oxides of Nitrogen, calculated as nitrogen dioxide (NO_2), from the Start-up Package Boiler or the Emergency Generator shall not exceed 140 lbs/hr. [District Rule 404]

22. The sulfur content on any gaseous fuel used at the facility shall not contain sulfur compounds, calculated as hydrogen sulfide at standard conditions, in excess of 50 grains per 100 cubic feet. [District Rule 412]

23. The sulfur content on any fuel oil used at the facility shall not exceed 0.5 percent by weight. [District Rule 412]

24. No more than 40 pounds per day of Volatile Organic Compounds shall be discharged from any permit unit using or applying any solvent. [District Rule 416 Adopted 1/17/01]

25. Duke Energy Moss Landing LLC shall operate the storage tank at the Gasoline Dispensing Facility with a permanent submerged fill pipe and a Phase I vapor recovery system which has been certified by the California Air Resources Board. [District Rule 418]

26. Duke Energy Moss Landing LLC shall operate a Phase II vapor recovery system on the Gasoline Storage Tank which has been certified by the California Air Resources Board. [District Rule 1002]

27. Duke Energy Moss Landing LLC shall limit emissions of volatile organic compounds by the use of architectural coatings which comply with the requirements of District Rule 426. [District Rule 426]

28. The emission concentration of oxides of nitrogen, as NO_2, from Boilers 6-1 and 7-1 shall not exceed 10 ppm during operation on natural gas. This limit is based on a one (1) hour average at three (3) percent oxygen (O_2) on a dry basis. [District Rule 431]

29. The NH_3 emission concentration from any emissions control device installed and operated pursuant to the requirements of Rule 431 shall not exceed 10 ppm, based upon the average of three 60-consecutive minute averages at three (3) percent oxygen (O_2) on a dry basis. [District Rule 431]

30. The CO emission concentration from Boilers 6-1 and 7-1 shall not exceed 400 ppm during steady-state compliance tests based upon a 60-consecutive minute average and shall not exceed 1000 ppm during normal operations based upon a one (1) hour clock-hour average at three (3) percent oxygen (O_2) on a dry basis. [District Rule 431]

31. The limits contained in Conditions 3, 26, 27, and 28 shall not apply during start-up, the time period during which the boiler has no fires in it, until the unit that it serves has reached minimum operating load, the catalytic reaction temperature and main breaker closure, or shutdown, the time period during which a unit is reduced below minimum load or catalytic reduction temperature, to a condition where the fires in the boiler are extinguished, not to exceed eight (8) hours. SCR catalytic controls and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions. [District Rule 431]

32. Duke Energy Moss Landing LLC shall limit emissions of volatile organic compounds during solvent cleaning and degreasing operations pursuant to the requirements of District Rule 433. [District Rule 433]

33. If total combined usage of coatings applied to metal parts and products, as defined by District Rule 434, equals or exceeds 55 gallons per year, each coating used for metal parts and products must not exceed the following volatile organic compound content limits:

Coating Category	VOC Content Limit, as Applied grams/liter	lbs/gal

Pretreatment Wash Primer	780	6.5
All Other Coatings	420	3.5

34. Duke Energy Moss Landing LLC shall comply with the requirements of Sections 61.145 through 61.147 of the National Emission Standard for Asbestos for all demolition and renovation projects. [40 CFR Part 61, Subpart M]

35. If applicable, Duke Energy Moss Landing LLC shall comply with the requirements of the National Emission Standard for Hazardous Air Pollutants from Combustion Turbines. [40 CFR Part 63, Subpart YYYY]

36. If EPA has not finalized 40 CFR Part 63, Subpart YYYY by May 15, 2003, Duke Energy Moss Landing LLC shall submit a "Part B" Maximum Achievable Control Technology (MACT) application to the District by the EPA established deadline with the MACT standard for Combustion Turbines defined for incorporation into the facilities' Title V permit. As an alternative to the "Part B" MACT application, Duke Energy Moss Landing LLC may provide documentation that the facility is not a "Major Hazardous Air Pollutant Source", and therefore not subject to the Combustion Turbine MACT Standard (40 CFR Part 63, Subpart YYYY). [Section 112j (Equivalent Emission Limitation By Permit) of the federal Clean Air Act]

37. If applicable, Duke Energy Moss Landing LLC shall comply with the requirements of the National Emission Standard for Hazardous Air Pollutants from Reciprocating Internal Combustion Engines. [40 CFR Part 63, Subpart ZZZZ]

38. If EPA has not finalized 40 CFR Part 63, Subpart ZZZZ by May 15, 2003, Duke Energy Moss Landing LLC shall submit a "Part B" Maximum Achievable Control Technology (MACT) application to the District by the EPA established deadline with the MACT standard for Reciprocating Internal Combustion Engines (RICE) defined for incorporation into the facilities' Title V permit. As an alternative to the "Part B" MACT application, Duke Energy Moss Landing LLC may provide documentation that the facility is not a "Major Hazardous Air Pollutant Source", and therefore not subject to the RICE MACT Standard (40 CFR Part 63, Subpart ZZZZ). [Section 112j (Equivalent Emission Limitation By Permit) of the federal Clean Air Act]

39. If applicable, Duke Energy Moss Landing LLC shall comply with the requirements of the National Emission Standard for Hazardous Air Pollutants from Industrial, Commercial and Institutional Boilers and Process Heaters. [40 CFR Part 63, Subpart DDDDD]

40. If EPA has not finalized 40 CFR Part 63, Subpart DDDDD by May 15, 2003, Duke Energy Moss Landing LLC shall submit a "Part B" Maximum Achievable Control Technology (MACT) application to the District by the EPA established deadline with the MACT standard for Industrial, Commercial and Institutional Boilers and Process Heaters defined for incorporation into the facilities' Title V permit. As an alternative to the "Part B" MACT application, Duke Energy Moss Landing LLC may provide documentation that the facility is not a "Major Hazardous Air Pollutant Source", and therefore not subject to the Industrial, Commercial and Institutional Boilers and Process Heaters MACT Standard (40 CFR Part 63, Subpart DDDDD). [Section 112j (Equivalent Emission Limitation By Permit) of the federal Clean Air Act]

41. Duke Energy Moss Landing LLC shall comply with the requirements of 40 CFR Part 68 - Risk Management Plans. Duke Energy Moss Landing LLC's Risk Management Plan must be revised and updated by January 23, 2006 or earlier as required by 40 CFR §68.190. Duke Energy Moss Landing LLC shall certify compliance with these requirements as part of the annual compliance certification required by 40 CFR Part 70 and this permit. [40 CFR Part 68]

42. Duke Energy Moss Landing LLC shall comply with the requirements of 40 CFR Part 82 - Protection of Stratospheric Ozone [40 CFR Part 82]

TESTING REQUIREMENTS AND PROCEDURES

43. Annual performance tests of Boilers 6-1 and 7-1 and the Gas Turbines shall be conducted in accordance with the Monterey Bay Unified Air Pollution Control District test procedures, and the written results of the performance tests shall be provided to the District within thirty (30) days after testing. A testing protocol shall be submitted to the District no later than thirty (30) days prior to the testing, and notification to the District at least ten (10) days prior to the actual date of testing shall be provided so that a District observer may be present. Changes to the test date made subsequent to the initial ten day notification may be communicated by telephone or other acceptable means no less than forty-eight (48) hours prior to the new test date. [District Rules 207 & 218]

44. No testing is specified for the generic (Rule 400) opacity requirement from Conditions 17 or 18. The equipment is assumed to be in compliance with the opacity requirement due to historical operations and local compliance inspections without opacity violations. If testing is conducted for Conditions 17 or 18, Duke Energy Moss Landing LLC should conduct testing in accordance with the methodology contained in EPA Method 9 or equivalent method and the averaging/aggregating period contained in District Rule 400. [District Rule 218]

45. No testing is specified for the (Rule 403) particulate matter emission standard from Condition 19. The fuel burning equipment is assumed to be in compliance with the particulate matter emission standard based upon the engineering calculations contained in the evaluation report. If testing is conducted for Condition 19, Duke Energy Moss Landing LLC should conduct testing in accordance with the methodology contained in EPA Method 5 or equivalent method. [District Rule 218]

46. No testing is specified for the (Rule 404) sulfur concentration limit in Condition 20. The fuel burning equipment is assumed to be in compliance with this sulfur concentration limit based upon the engineering calculations contained in the evaluation report. If testing is conducted for Condition 20, Duke Energy Moss Landing LLC should conduct testing in accordance with the methodology contained in EPA Method 6 or equivalent method. [District Rule 218]

47. No testing is specified for the (Rule 404) NO_x (oxides of nitrogen) limit in Condition 21. The fuel burning equipment is assumed to be in compliance with these NO_x limits based upon the engineering calculations

contained in the evaluation report. If testing is conducted for Condition 21, Duke Energy Moss Landing LLC should conduct testing in accordance with the methodology contained in EPA Method 7E or equivalent method. [District Rule 218]

48. Duke Energy Moss Landing LLC shall cause quarterly testing to be performed to verify compliance with the Ammonia (NH_3) slip limits established in Conditions 6 and 29. Duke Energy Moss Landing LLC shall conduct this testing in accordance with the collection method specified in BAAQMD Source Test Procedure ST-1B and the analysis specified in EPA method 350.3. [District Rules 207, 218, & 431]

49. No testing is specified for the (Rule 431) normal operation CO limit contained in Condition 30. Continuing compliance with these limits will be assured by the continuous emission monitoring (CEM) system. Compliance with the steady state limit will be verified by the testing required by Condition 43. [District Rules 207 & 218]

50. Testing of all diesel fuel oil delivered to the facility shall be conducted prior to or upon receipt of the diesel fuel oil, or in lieu of testing a manufactures certification of the sulfur content of the diesel fuel oil shall be supplied at the time of delivery. Duke Energy Moss Landing LLC shall conduct testing in accordance with ASTM D1552-83 or ASTM D1552-83 or equivalent method or shall receive certification as to the sulfur content of the fuel oil from the manufacturer to verify compliance with Condition 23. Duke Energy Moss Landing LLC shall furnish the District the certification or written results of the test prior to firing the fuel oil, but in no case later than thirty (30) days of completion. [District Rule 218]

MONITORING AND RECORD KEEPING REQUIREMENTS

51. CEM Systems shall be installed and operated on Boilers 6-1 and 7-1 and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A). These systems shall be designed to continuously record the measured gaseous concentrations, and calculate and continuously monitor and record the CO, O_2, and NO_x concentrations corrected to three (3) percent oxygen (O_2) for the Boilers and fifteen (15) percent oxygen (O_2) for the Gas Turbines on a dry basis. [District Rules 207, 213 & 219, 40 CFR Part 64]

552. The equipment installed on Boilers 6-1 and 7-1 and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A) for the continuous monitoring of CO_2 or O_2 and NO_x shall be maintained and operated in accordance with 40 CFR Parts 72 and 75. [District Rule 219]

53. The equipment for the continuous monitoring of CO on Boilers 6-1 and 7-1 and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A) shall be maintained and operated in accordance with 40 CFR Part 60 Appendix F and with the ability to calculate CO emission concentrations corrected to three (3) percent oxygen for the Boilers and fifteen (15) percent oxygen for the Turbines on a dry basis. [District Rule 431]

For periods of missing CO data, CO hourly values shall be substituted from valid hourly average data from the previous thirty (30) unit operating days, excluding periods of start-up, shutdown and combustor tuning. The CO data shall be substituted based on equivalent incremental load ranges.

54. A written Quality Assurance program for Boilers 6-1 and 7-1 and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A) CEMs must be established in accordance with 40 CFR Part 75, Appendix B for NO_x and 40 CFR Part 60, Appendix F for CO which includes, but is not limited to: procedures for daily calibration testing, quarterly linearity and leak testing, record keeping and reporting implementation, and relative accuracy testing. [District Rule 219]

55. Duke Energy Moss Landing LLC shall demonstrate compliance by using properly operated and maintained continuous emission monitors (during all hours of operation including equipment Start-up and Shutdown periods and Combustor Tuning Activities, except for periods of CEM maintenance performed in accordance with District requirements) for all of the following parameters [District Rules 207 and 431]:

a) Firing hours and Fuel Flow Rates.
b) Oxygen (O_2) Concentrations, Nitrogen Oxide (NO_x) Concentrations, and Carbon Monoxide (CO) Concentrations.
c) Ammonia Injection Rates.

Duke Energy Moss Landing LLC shall record all of the above parameters every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, Duke Energy Moss Landing LLC shall calculate and record the total Firing Hours, the average hourly Fuel Flow Rates, and pollutant emission concentrations.

Duke Energy Moss Landing LLC shall use the parameters measured above and District-approved calculation methods to calculate the following parameters:

d) Heat Input Rate.
e) Corrected NO_x concentrations, NO_x mass emissions (as NO_2), corrected CO concentrations, and CO mass emissions.

For each source, Duke Energy Moss Landing LLC shall record the parameters specified in d) and e) of this Condition every 15 minutes (excluding normal calibration periods). As specified below, Duke Energy Moss Landing LLC shall calculate and record the following data:

f) Total Heat Input Rate for every clock hour.
g) The NO_x mass emissions (as NO_2), and corrected average NO_x emission concentration for every clock hour.
h) The CO mass emissions, and corrected average CO emission concentration for every clock hour.
i) On an hourly basis, the cumulative total NO_x mass emission (as NO_2) and the cumulative total CO mass emissions.
j) For each calendar day, the cumulative total NO_x mass emission (as NO_2) and the cumulative total CO mass emissions.
k) For each calendar quarter, the cumulative total NO_x mass emission (as NO_2) and the cumulative total CO mass emissions.
l) For each calendar year, the cumulative total NO_x mass emission (as NO_2) and the cumulative total CO mass emissions.

56. Duke Energy Moss Landing LLC shall calculate and record on a daily basis, the Volatile Organic Compound (VOC) mass emissions, Fine Particulate Matter (PM_{10}) mass emissions, Sulfur Dioxide (SO_2) mass emissions, and Ammonia (NH_3) mass emissions from each power generating source. Duke Energy

Moss Landing LLC shall use the actual heat input rates, actual Start-up times, actual Shutdown times, actual Combustor Tuning times and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows [District Rule 207]:

a) For each calendar day, VOC, PM_{10}, SO_2, and NH_3 mass emissions shall be summarized for each source.
b) On a daily basis, the cumulative total VOC, PM_{10}, SO_2 and NH_3 mass emissions shall be summarized for each calendar quarter and for the calendar year.

57. To demonstrate compliance with Condition 13, Duke Energy Moss Landing, LLC shall record the start time, end time and duration of each steam turbine cold start-up and each combustor tuning period. This information shall be compiled and supplied to the District in the semiannual monitoring report as specified in Condition 69. [District Rule 207]

58. Instrumentation must be operated to measure the SCR catalyst inlet temperature and pressure differential across the SCR catalyst. [District Rule 207]

59. Duke Energy Moss Landing LLC shall monitor SO_2 emissions from Boilers 6-1 and 7-1and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A) in accordance with 40 CFR Part 72 and 75. [District Rule 219]

60. Duke Energy Moss Landing LLC shall maintain daily records to document compliance with condition 24. [District Rule 416 Adopted 4/20/94]

61. Duke Energy Moss Landing LLC shall maintain records showing the quantity of all gasoline delivered to the gasoline storage tanks. [District Rule 418]

62. As applicable Duke Energy Moss Landing LLC shall maintain the following general records of required monitoring information [District Rule 218]:

a) the date and time of sampling or measurements;
b) the date(s) analyses were performed;
c) the company or entity that performed the analyses;
d) the analytical techniques or methods used;
e) the results of such analyses;
f) the operating conditions existing at the time of sampling or measurement; and
g) the records of quality assurance for continuous monitoring systems (including, but not limited to quality control activities, audits, and calibration drift checks) and source testing methods.

63. Duke Energy Moss Landing LLC shall maintain records on the occurrence and duration of any startup, shutdown, or malfunction in the operation of any CEM. [District Rule 213]

64. Duke Energy Moss Landing LLC shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring, sample collection, measurement, report, and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. [District Rule 218]

REPORTING REQUIREMENTS

65. Duke Energy Moss Landing LLC shall submit monthly reports on the continuous emissions monitoring systems to the District, in a District approved format, within 30 days from the end of the month and these shall include [District Rules 207, 213, & 218] :

a) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and

b) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and

c) time and date of each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of system repairs and adjustments; and

d) a negative declaration specifying when no excess emissions occurred; and

e) a summary of actual monthly emissions from the CEM for all equipment which operated during the month.

66. Duke Energy Moss Landing LLC shall report all breakdowns which results in the inability to comply with any emission standard or requirement contained on this permit to the Air Pollution Control Officer (APCO) within 1 hour of the occurrence, this one hour period may be extended up to six hours for good cause by the APCO. The APCO may elect to take no enforcement action if Duke Energy Moss Landing LLC demonstrates to the APCO's satisfaction that a breakdown condition exists.

The estimated time for repair of the breakdown shall be supplied to the APCO within 24 hours of the occurrence and a written report shall be supplied to the APCO with 5 days after the occurrence has been corrected. This report shall include at a minimum [District Rule 214]:

a) a statement that the condition or failure has been corrected and the date of correction; and

b) a description of the reasons for the occurrence; and

c) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and

d) an estimate of the emissions caused by the condition or failure.

67. If combined annual emissions from the entire facility are greater than 25 tons of either NO_x or VOC, Duke Energy Moss Landing LLC shall submit an Emission Statement for each Permit to Operate and Authority to Construct in accordance with the mandatory provisions of Section 182(a)(3)(B)(ii) of the federal Clean Air Act. [District Rule 300, Section 4.4]

68. Duke Energy Moss Landing LLC shall submit quarterly Electronic Data Reports (EDR) to EPA for Boilers 6-1 and 7-1 and Combined Cycle Units 1 (Gas Turbines 1A & 2A) and 2 (Gas Turbines 3A & 4A). These reports must be submitted within 30 days following the end of each calendar quarter and shall include all information required in §75.64. [40 CFR Part 75]

69. Duke Energy Moss Landing LLC shall submit semiannual monitoring reports to the District, in a District approved format, no later than August 15 for the period of January 1 through June 30 and no later than February 15 for the period of July 1 through December 31. [District Rule 218]

These monitoring reports shall include at a minimum:

a) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and

b) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and

c) all information pertaining to any monitoring as required by this permit; and

d) a negative declaration specifying when no excess emissions occurred.

70. Duke Energy Moss Landing LLC shall submit an annual compliance certification report to the District and U.S. EPA, in a District approved format, no later than February 15 for the period of January 1 through December 31 of the preceding year [District Rule 218].

This report shall include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report and shall include at a minimum:

a) identification of each term or condition of the permit that is the basis of the certification; and

b) the compliance status; and

c) whether compliance was continuous or intermittent; and

d) the method(s) used for determining the compliance status of the source, currently and over the reporting period.

GENERAL CONDITIONS

71. Duke Energy Moss Landing LLC shall comply with all conditions of this federal operating permit. Any noncompliance with a permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [District Rule 218]

72. In an enforcement action, the fact that Duke Energy Moss Landing LLC would have to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit is not a defense. [District Rule 218]

73. This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the District. The filing of a request by Duke Energy Moss Landing LLC for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 218]

74. This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. [District Rule 218]

75. Duke Energy Moss Landing LLC shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, Duke Energy Moss Landing LLC shall also furnish to the District copies of records required to be retained by this permit. [District Rule 218]

76. For applicable requirements that will become effective during the permit term, Duke Energy Moss Landing LLC shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement. [District Rule 218]

77. Any document submitted to the District pursuant to this permit shall contain certification by the responsible official of truth, accuracy and completeness. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Duke Energy Moss Landing LLC shall promptly, upon discovery, report to the District a material error or omission in these records, reports, plans, or other documents. [District Rule 218]

78. Duke Energy Moss Landing LLC shall report any violation of any requirement contained in this permit to the District within 96 hours after such occurrence. The violation report shall include the time intervals, date and magnitude of excess emissions; nature and cause of the excess (if known), corrective actions and preventive measures adopted. [District Rules 214 and 218]

79. Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, record keeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with. [District Rule 218]

80. For this federal operating permit to remain valid through the permit term of five years from the date of issuance, Duke Energy Moss Landing LLC shall pay an annual emission fee based upon the requirements of District Rule 308. [District Rule 218]

81. Duke Energy Moss Landing LLC shall have available at the facility at all times a copy of this federal operating permit. [District Rule 218]

82. For protection from enforcement action based upon an emergency, as defined in District Rule 218, the responsible official for Duke Energy Moss Landing LLC shall submit to the District relevant evidence which demonstrates [District Rule 218]:

a) an emergency occurred; and

b) that Duke Energy Moss Landing LLC can identify the cause(s) of the emergency; and

c) that the facility was being properly operated at the time of the emergency; and

d) that all steps were taken to minimize the emissions resulting from the emergency; and

e) within two working days of the emergency event, Duke Energy Moss Landing LLC provided the District with a description of the emergency and any mitigating or corrective actions taken.

83. Upon presentation of credentials, Duke Energy Moss Landing LLC shall allow the District, the ARB, the EPA, or an authorized representative, to perform the following [District Rule 218]:

a) enter upon the premises where the federal operating permit source is located or in which any records are required to be kept under the terms and conditions of this federal operating permit;

b) to have access to and copy any records required to be kept under the terms and conditions of this federal operating permit;

c) to inspect any equipment, operation, or process described or required in this federal operating permit; and,

d) to sample emissions from the source.

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MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT
TITLE IV ACID RAIN PERMIT

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

Effective January 1, 2003 through December 31, 2007

ISSUED TO:

Duke Energy Moss Landing LLC
Moss Landing Power Plant
P.O. Box 690
Moss Landing, CA 95039

PLANT SITE LOCATION:

Highway 1 and Dolan Road
Moss Landing, CA 95039

ISSUED BY:

Douglas Quetin, Air Pollution Control Officer — Date

ORIS Code: 0260

Nature of Business: Electric Power Generation

SIC Code: 4911 - Electric Power Generation

DESIGNATED REPRESENTATIVE:

Name: Elton E. McCrillis
Title: Plant Manager
Phone: (831) 633-6746

ALTERNATIVE DESIGNATED REPRESENTATIVE:

Name: Rex A. Lewis
Title: Production Superintendent
Phone: (831) 633-6698

FACILITY CONTACT PERSON:

Name: Steve Abbott
Title: Environmental Specialist
Phone: (831) 633-6649

ACID RAIN PERMIT CONTENTS

1) Statement of Basis

2) SO_2 allowances allocated under this permit and NO_x requirements for each affected unit.

3) Comments, notes and justifications regarding permit decisions and changes made to the permit application forms during the review process, and any additional requirements or conditions.

4) The permit application submitted for this source. The owners and operators of the source must comply with the standard requirements and special provisions set forth in the application.

1) STATEMENT OF BASIS

Statutory and Regulatory Authorities: In accordance with District Rules 218 and 219 and Titles IV and V of the Clean Air Act, the Monterey Bay Unified Air Pollution Control District issues this permit pursuant District Rules 218 and 219.

2) SO_2 ALLOWANCE ALLOCATIONS

UNIT 6-1	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	8921*	8921*	8921*	8921*	8921*
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

UNIT 7-1	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	976*	976*	976*	976*	976*
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

UNIT 1A	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

UNIT 2A	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

UNIT 3A	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

UNIT 4A	Year	2003	2004	2005	2006	2007
	SO_2 allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO_x Limit	This unit is not subject to the NO_x requirements from 40 CFR Part 76 as this unit is not capable of firing on coal.				

* - The number of allowances actually held by an affected source in a unit account may differ from the number allocated by USEPA. This condition would not necessitate a revision to the unit SO_2 allowance allocations identified in this permit.

3) COMMENTS, NOTES AND JUSTIFICATIONS

None

4) PERMIT APPLICATION

Attached